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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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JUL 19 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

Annual Assessment of the Status of)
Competition in the Market for the)
Delivery of Video Programming)

CS Docket No. 96-133

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COMMENTS OF BELL ATLANTIC

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COMMENTS OF BELL ATLANTIC¹

The most significant change in the market for the delivery of video programming since the Commission's last report to Congress² is the passage of the Telecommunications Act of 1996.³ The 1996 Act holds the promise of substantially increasing competition in the market for delivery of video programming, but it is up to the Commission to adopt rules that make the Act's promise a reality. In a number of instances, the Commission already has promulgated rules that should encourage the development of competitive video delivery systems;⁴ in other instances, the Commission's rulemakings have not yet been completed.⁵ In these areas, the Commission should ensure that its final rules carry out the spirit and intent of the 1996 Act.

¹ These comments are filed on behalf of the Bell Atlantic Telephone Companies (Bell Atlantic - Delaware, Inc., Bell Atlantic - Maryland, Inc., Bell Atlantic - New Jersey, Inc., Bell Atlantic - Pennsylvania, Inc., Bell Atlantic - Virginia, Inc., Bell Atlantic - Washington, D.C., Inc., and Bell Atlantic - West Virginia, Inc.) and Bell Atlantic Video Services Company ("Bell Atlantic").

² *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Second Annual Report*, CS Docket No. 95-61, 11 FCC Rcd 2060 (1996) ("1995 Report").

³ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 ("1996 Act").

⁴ E.g., *Preemption of Local Zoning Regulation of Satellite Earth Stations*, Report and Order, Further Notice of Proposed Rulemaking, IB Docket No. 95-59, FCC 96-78 (rel. Mar. 11, 1996) ("Satellite Order").

⁵ E.g., *Implementation of Section 302 of the Communications Act of 1996; Open Video Systems*, Second Report and Order, CS Docket No. 96-46, FCC 96-249 (rel. June 3, 1996) ("OVS Order"); *Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Service*, Notice of Proposed Rulemaking, CC Docket No. 96-112, FCC 96-214 (rel. May 10, 1996) ("Cost Allocation NPRM"); *Implementation of Section 207 of the Telecommunications Act of 1996; Restrictions on Over-the-Air Reception Devices: Television Broadcast and Multichannel Multipoint Distribution Service*, Notice of Proposed Rulemaking, CS Docket No. 96-83, FCC 96-151 (rel. Apr. 4, 1996) ("MMDS NPRM").

Set out below are comments on certain aspects of the 1996 Act, and reports on competitive video delivery systems in which Bell Atlantic is involved.

I. The 1996 Act Holds The Promise Of Substantially Increasing Competition In The Market For The Delivery Of Video Programming.

A. The Open Video System Option For Telephone Company Provision Of Video Programming May Offer The Flexibility Needed To Compete With Cable.

The 1996 Act contains a number of provisions designed to “introduce vigorous competition in entertainment and information markets.”⁶ Perhaps the most important was the repeal of the telco/cable cross-ownership restriction and its replacement with sections 651-653 of the Act.⁷ Those sections provide telephone companies with “multiple entry options [into delivery of video programming] to promote competition, to encourage investment in new technologies and to maximize consumer choice of services that best meet their information and entertainment needs.”⁸ Telephone companies now may provide video programming to subscribers on radio-based systems, on a common carrier basis, through traditional cable systems, or through open video systems.⁹

The open video system option was created by Congress in the 1996 Act, and establishes a new regulatory framework for the delivery of video programming to subscribers. Telephone companies that choose the open video system option are subject to reduced regulatory burdens, but in return must cede editorial control over up to two-thirds of the capacity on the system.¹⁰

⁶ H.R. Conf. Rep. No. 104-458, 104th Cong., 2d Sess. at 178 (1996) (“Conference Report”).
⁷ 1996 Act, §302(a), (b).
⁸ Conference Report at 172.
⁹ 1996 Act, §651(a).
¹⁰ 1996 Act, §653.

The Commission initiated a Notice of Proposed Rulemaking concerning open video systems (OVS) on March 11, 1996.¹¹ On June 3, 1996, the Commission released its Second Report and Order adopting rules to implement section 653 of the Act. The Commission avoided the pitfalls of trying to resolve every hypothetical issue up front and instead appropriately established broad guidelines that should allow OVS operators the flexibility needed to develop their systems and compete with incumbent cable operators. As a result, the Commission's rules generally comport with the spirit and intent of the 1996 Act in seeking to encourage competition in the video marketplace.

The Notice of Inquiry seeks comment on the likely effect of the new OVS option for LEC entry into video programming transmission and distribution, and the plans LECs have with respect to OVS, common carriage, radio communications, cable, and other technologies.¹² At this point, it is too early to tell. As the Commission is aware, and as discussed further below, Bell Atlantic has been an eager participant in the video delivery market, and has argued repeatedly for rules that would make real telephone company participation possible.¹³ The Commission must still rule on a number of petitions for reconsideration filed in the OVS docket. In addition, the Commission has not yet released its order in the video cost allocation docket.¹⁴ Telephone companies will not be able to determine which, if any, option makes sense for video

¹¹ Bell Atlantic provided extensive comments in the Commission's rulemaking proceeding and will not repeat those arguments here. See *Implementation of Section 302 of the Telecommunications Act of 1996; Open Video Systems*, CS Docket No. 96-46, Comments of Bell Atlantic, BellSouth, GTE, Lincoln Telephone, Pacific Bell, SBC Communications, filed April 1, 1996; Reply Comments of Bell Atlantic, BellSouth, GTE, Lincoln Telephone, Pacific Bell, SBC Communications, filed April 11, 1996.

¹² Notice of Inquiry, ¶15(b).

¹³ *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, CS Docket No. 95-61, Comments of Bell Atlantic at 3-12, filed June 30, 1995.

¹⁴ Cost Allocation NPRM.

services until final rules are in place. Nevertheless, the 1996 Act has made such participation a possibility, and the Commission's rules released on June 3 go far toward making it a reality.

B. Preemption Of Restrictions On Television, MMDS, And DBS Antennae Will Provide Consumers With Additional Choices For Video Programming.

The 1996 Act directed the Commission to "promulgate regulations to prohibit restrictions that impair a viewer's ability to receive video programming services through devices designed for . . . multichannel multipoint distribution service . . ."¹⁵ Current state and local regulations and non-governmental rules that restrict the placement of antennae and associated reception devices clearly hinder the ability of consumers to receive video programming services through MMDS.

The Commission has adopted rules preempting state and local regulations that affect the installation, maintenance, or use of satellite antennas.¹⁶ The Commission has proposed similar rules concerning devices designed for reception of multichannel multipoint distribution service ("MMDS").¹⁷ The Commission is required by the language of the Telecommunications Act of 1996 to adopt such rules.¹⁸ Moreover, adoption of comparable rules for MMDS is imperative to remove regulatory impediments that would impair consumers' access to wireless cable services and, as a result, place wireless cable at a competitive disadvantage to other video platforms such as DBS.

¹⁵ 1996 Act, §207; Conference Report at 166.

¹⁶ Satellite Order.

¹⁷ MMDS NPRM

¹⁸ 1996 Act, §207 ("[T]he Commission shall . . . promulgate regulations to prohibit restrictions that impair a viewer's ability to receive video programming services through devices designed for over-the-air reception of television broadcast signals, multichannel multipoint distribution service, or direct broadcast satellite services."

C. New Entrants Must Offer Comparable Programming In Order To Be Competitively Viable.

The Act subjects OVS operators, like cable operators, to the program access rules,¹⁹ and also provides that “[a]ny provision that applies to a cable operator under [section 628] shall apply to a common carrier or its affiliate that provides video programming by any means directly to subscribers.”²⁰ The Commission’s Order in the OVS docket appropriately addressed the question of how the program access rules apply in the OVS context, and explained in some detail the application of both the burdens and benefits flowing from the rules to MVPDs that use OVS.²¹ As Bell Atlantic has explained, competition with incumbent cable providers will be impossible if OVS-affiliated programmers are denied access to key programming. The Commission’s rules further Congress’ goal of encouraging such competition.

II. Changes In The Market Since The Commission’s Last Report Demonstrate That Consumers Are Hungry For More Choices In Video Programming.

A. Dover Township, New Jersey

In its Report last year, the Commission noted that Bell Atlantic’s video dialtone system in Dover Township, New Jersey was “scheduled to begin service in 1995, and is expected to become the first permanent commercial VDT system in operation.”²² Commercial launch began in January 1996 following a 200 friendly user beta test. FutureVision, the only currently active video programming provider (VPP) on the network, reported that as of the end of April, it has signed up 2,185 subscribers from a marketing base of 3,125 homes.²³

¹⁹ 1996 Act, §653(c)(1).

²⁰ 1996 Act, §628(j).

²¹ OVS Order, ¶¶ 175-196.

²² 1995 Report at ¶94.

²³ Information on FutureVision’s finances should be obtained from FutureVision. Bell Atlantic notes that FutureVision was recently acquired by TelQuest.

Seven VPPs have reserved 304 of the 384 available digital channels on the system (one of the 384 channels is retained as a system-wide, nondiscriminatory menu channel).

Bell Atlantic is building an all-digital, fiber-to-the-curb network to provide voice, data, and video services to Dover Township consumers and businesses. The network uses digital switching and fiber-optic cables, which carry both telephone and video signals out to a neighborhood terminal -- called an optical network unit, or ONU -- that today serves up to eight homes. From the ONU, coaxial cables carry video signals into the home, and copper wires carry telephone signals.

Bell Atlantic has completed construction to 13,000 homes to date, installing approximately 1.2 million feet of fiber optic cable and 2,800 ONUs. Bell Atlantic plans to complete construction to 16,000 homes by the end of 1996, and to 28,000 homes by the end of 1997. Construction to all 38,000 homes and businesses is expected to be completed during the fourth quarter of 1998.

In response to FutureVision's entry, the incumbent cable operator, Adelphia, lowered its monthly price for basic service from \$25.28 to \$18.95 to compete with FutureVision's initial price of \$19.95. FutureVision then lowered its price to \$14.95. On May 14, 1996, Adelphia announced that it would offer:

- Free high speed access to the Internet for three Toms River schools in June;
- High speed Internet access for cable subscribers at \$30-35 per month later this summer;
- Local telephony service (no timeframe announced);
- Interactive features in the near future with a new analog set-top box; and
- The future capability to offer up to 200 digital TV channels.

It is evident, therefore, that competition is bringing lower prices and more service to cable customers in Dover Township.

B. Northern Virginia Market Trial

Since August, 1995, nearly 1,000 homes in Fairfax County, Virginia have been participating in a market trial of video-on-demand service using ADSL technology.²⁴ The trial participants have been able to order from a list of more than 655 program choices each month. The programs are available whenever they desire, and the service provides on-screen features such as pause, rewind and fast forward that customers control by using a hand held remote control device.

- During an average month, the programs available consisted of about 200 new, recent, and classic movies; more than 120 episodes of television sitcoms, dramas, talk shows and news specials; and 45 sports, comedy and music performances. The initial product mix also included more than 170 special interest programs in areas such as history and culture, sports and fitness, home and family, and personal pursuits; and approximately 120 titles of children's programming, ranging from popular cartoons to educational fare. Approximately 25 percent of the programming was new each month. Prices for programs ranged from \$.49 to \$4.49. In addition, Bell Atlantic tested a first generation of interactive shopping. Among key results for the first six months of the trial²⁵ are:

²⁴ The market trial is scheduled to end during the fourth quarter of 1996.

²⁵ A report of the trial is attached as Exhibit 1.

- The composite buy rate for all subscribers in the first six months was 330 percent per month, compared to the pay-per-view industry average buy rate of 26 percent;²⁶
- Participating households averaged 3.3 videos purchased per month, compared to 3.2 videos rented per month by households with a VCR;
- Buy rates for the top movie title (30 percent) significantly exceeded the highest buy rates for the identical movie title (6 percent) in a high-performing cable pay-per-view system;
- On average, 73 percent of all subscribers purchased some programming each month;
- On average, more than 70 percent of all program titles were viewed each month, reflecting customers' desire for an offering with both breadth and depth. Viewing by program category also reflects a desire for diversified program offerings; and
- Market trial customers routinely requested even more content than the more than 655 programs available for viewing each month during the period of measurement.

The level and diversity of the demand for programming suggests that customers have a tremendous appetite for the choice this type of programming gave them. While the most popular programming was first-run movies, the second most frequently accessed category was children's programming.

²⁶ These buy rates are calculated by dividing the number of units sold per month by the number of addressable households, then multiplying by 100. The pay-per-view industry rate was reported in *The 1996 Pay-Per-View Report*, published by Paul Kagan Associates, Inc.

III. Competitive Video Programming May Be Delivered Over A Variety Of Technologies.

A. Switched Digital Video

On July 15, 1996, Bell Atlantic announced that it had selected Lucent Technologies Inc. as a supplier of key network components for Bell Atlantic's initial Full Service Network deployment in the mid-Atlantic region.²⁷

Network equipment to be supplied by Lucent Technologies and BroadBand Technologies will include host digital terminals [HDTs], optical network units [ONUs], administrative systems and operations support interfaces. HDTs combine digital telephone and video signals, which are carried via fiber-optic cables between the Bell Atlantic switching office and ONUs.

These ONUs serve about 25 to 30 homes each and are located "at the curb" on poles or in small cabinets on the ground. They split the integrated signal from the HDT into two distinct signals -- one for telephone service, and one for video, high-speed data and interactive multimedia services. The telephone signal is carried over copper wires into homes and small businesses. The video/interactive signal is carried either by copper or coaxial cable from the ONU to the customer.

Later this year, Bell Atlantic will begin installing fiber-optic facilities and electronics to replace the predominantly copper cables between its telephone switching offices and customers. Fiber-optics provide higher quality and more reliable telephone services at lower operating and maintenance costs. The company plans to add digital video broadcast capabilities to this "fiber-to-the-curb," switched broadband network by the third quarter of 1997, and broadband Internet access, data communications and interactive multimedia capabilities in late 1997 or early 1998.

²⁷ A copy of the News Release is attached as Exhibit 2.

The fiber-to-the-curb architecture that Bell Atlantic will build is the next generation of integrated switched digital system after Dover Township.

B. Digital MMDS

Among the important steps taken by the Commission since its last Report is the recent order granting a petition for declaratory ruling on the use of digital modulation by MMDS.²⁸ As the Commission recognized, conversion of MDS and ITFS from analog to digital will allow wireless cable operators to increase their channel capacity and service offerings, making them more competitive with other video delivery methods, such as DBS and wired cable systems.²⁹ By authorizing wireless cable operators to use digital transmission, the Commission helped “accelerate the development of wireless cable services and advance Congress’ goal of ‘promot[ing] competition . . . in order to secure lower prices and higher quality services for American telecommunications consumers.’”³⁰ As the industry gains experience with digital transmission and becomes more competitive with other video delivery options, it will be important for the Commission to continue to look for ways of removing regulatory barriers to competition.

²⁸ *Request For Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations*, DA 95-1854, Declaratory Ruling and Order, FCC 96-304 (rel. July 10, 1996) (“Ruling and Order”).

²⁹ *Id.* at ¶¶2, 4-5.


³⁰ *Id.* at ¶2, quoting 1996 Act.

Conclusion

A number of positive developments for competition in the delivery of video programming have occurred since the Commission's last Report. Because a number of key dockets have not yet been finally decided, it is not yet possible to say with certainty that the era of competition in the delivery of video programming has arrived. Nevertheless, the passage of the Telecommunications Act of 1996, the Commission's rules implementing the new open video system option, and the steps the Commission has taken steps to increase the competitive viability of MMDS hold the promise that a competitive market for the delivery of video programming will soon be a reality.

Respectfully submitted,

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**Bell Atlantic's Market Trial Shows Video-On-Demand
Capable of Becoming Key Revenue Generator With Buy Rates 12
Times That of Pay-Per-View**

Stargazer¹ Earns Top Grades on Mid-Term Report Card

FAIRFAX, VA -- Results are in for the first six months of Bell Atlantic Video Services' pioneering video-on-demand market trial, showing buy rates of about 330 percent,² compared to the pay-per-view industry average buy rate of 26 percent.³ This data also suggests that video-on-demand has the potential to challenge video tape rental as the top revenue generator for Hollywood studios.

"The combination of video server storage capacity -- or "shelf space" -- and convenience in ordering has resulted in buy rates that are more than twelve times that of the average pay-per-view system," explained Stuart Johnson, chairman of Bell Atlantic Video Services. "We've also found that our customers are substituting Stargazer for video tape rental. This suggests that video-on-demand technology can challenge video rental as a key revenue source for Hollywood," Johnson said. "More importantly, I'm convinced we can significantly increase buy rates once video-on-demand is packaged

¹ "Stargazer" is Bell Atlantic's provisional brand name for the service it has been testing. The commercial brand name for a vastly new and improved interactive product will be developed by TELE-TV.

² These buy rates are calculated by dividing the number of units sold per month by the number of addressable households, then multiplying by 100.

with the promotional capabilities associated with linear TV and is blended with other categories of programming, such as live events.”

The 330 percent buy rate is just one of the significant findings of Bell Atlantic’s video-on-demand trial that the company will use as it enters the video entertainment business later this year. Bell Atlantic’s initial offering will be a wireless digital TV service with near-video-on-demand capability.

“We will use our insights into customer viewing patterns initially to help us organize programming delivered via wireless digital TV,” said Johnson. “But all signs to date show that when Bell Atlantic’s full service network is built, video-on-demand will be a key product differentiator.”

Bell Atlantic Video Services today released a “mid-term report card” of trial results, including data on programming preferences, customer buy rates, installation and repair, customer churn and pricing preferences.

“Our trial customers have told us that not only will they choose our product over video rental, premium cable services and pay-per-view,” said Frank Pereira, president of Bell Atlantic Video Services, “but they are willing to pay competitive prices for it. Our delivery system meets their needs and our customer service is rated excellent.”

Since the end of August 1995, nearly 1,000 home owners in the Virginia suburbs of Washington, D.C., have been able to order from a list of more than 655 program choices each month, available whenever they desire -- and with on-screen features such as pause, rewind and fast forward that are controlled by using a hand held remote control device. The first trial customer was installed in May 1995. This report covers the period May-November 1995.

The customers were recruited through a direct mail campaign aimed at more than 16,000 households that are located close enough to one of several Bell Atlantic facilities equipped to deliver video signals over telephone lines. The direct mail effort resulted in an 8 percent positive response rate over the course of 10 days. The number of trial customers was limited to 1,000 for legal reasons that govern use of the Bell Atlantic telephone network for the market testing of the transmission of video.

Bell Atlantic is using the trial to perfect processes for local marketing, sales and service in the video entertainment and information arena, as well as to gain insights into organizing, maintaining inventory and managing the traffic involved in the commercial presentation of thousands of video programs. The current market trial builds on a successful technical trial of video-on-demand capabilities with 300 households in Northern Virginia that ran from April 1993 to March 1995.

The results of the market trial also are being used by TELE-TV as it develops a commercial interactive TV service, slated for delivery by Bell Atlantic Video Services and others to selected markets in 1997. TELE-TV is the new media and technology venture that Bell Atlantic formed last year with Pacific Telesis and NYNEX; it is providing significant support for Bell Atlantic's video-on-demand trial.

The trial has generated a host of findings for Bell Atlantic and its partners.

Selected results of the trial include the following:

- Composite buy rates for *all* subscribers in the first six months was 330 percent per month, compared to the pay-per-view industry average buy rate of 26 percent.
- Stargazer households averaged 3.3 videos purchased per month, compared to 3.2 videos rented per month by households with a VCR.
- Buy rates for the top Stargazer movie title (30 percent) significantly exceeded the highest buy rates for the identical movie title (6 percent) in a high-performing cable pay-per-view system.
- On average, 73 percent of all subscribers purchased some programming each month.
- New release movies were the most popular content selection, followed by children's programming and library movies.
- On average, more than 70 percent of all program titles were viewed each month, reflecting customers' desire for an offering with both breadth and depth. Usage by category also supports a diversified product offering.
- Market trial customers routinely requested even more content than the more than 655 programs available for viewing each month during the period of measurement. The program line-up included more than 200 full length movies. This suggests a tremendous appetite for videos on demand.

- Customers want an even more dynamic experience in terms of functionality -- especially in the area of home shopping -- than was available with the service. This points to the need to deliver the service using more advanced technology.
- According to research conducted by an independent firm, provision of customer service has met or exceeded customer expectations 96 percent of the time (July - November, average ratings over eight categories, including response time and degree of helpfulness).
- Bell Atlantic Video Services experienced less than 1 percent controllable churn per month during the period measured.

From the first day of the trial, approximately 42,000 minutes of programming have been available to customers, on demand, at any time of the day. The product mix during an average month was comprised of about 200 new, recent and classic movies; more than 120 episodes of television sitcoms, dramas, talk shows and news specials; and 45 sports, comedy and music performances. The initial product mix also included more than 170 special interest programs in areas such as history and culture, sports and fitness, home and family, and personal pursuits; and approximately 120 titles of children's programming, ranging from popular cartoons to educational fare.

A first generation of interactive shopping -- Stargazer Marketplace -- was also tested during the first six months of the trial. Stargazer Marketplace was phased out at the end of 1995. TELE-TV is now focusing on development of the next generation of interactive shopping, which will utilize more robust functionality than is currently available on Stargazer. Many of the lessons learned from the Stargazer trial will be incorporated into this development. Interactive shopping is slated to return with TELE-TV-branded, commercial versions of interactive TV in the next year or two.

On a technical level, Bell Atlantic's on-demand programming service consists of data stored in computers that is forwarded to a TV screen when a viewer calls it up -- as happens with the electronic computer mail systems with which many are familiar.

By virtue of the data compression techniques that have been developed and perfected by Bell Atlantic and TELE-TV Systems, it is now economically feasible to store movies and TV programs as data on computers and transmit them to a TV set when a viewer presses a button on his or her remote control device.

"Bell Atlantic's market trial has afforded TELE-TV and its partners an opportunity to test and refine the systems and processes that must be in place if a company is to deliver video-on-demand commercially," said Ed Grebow, president of TELE-TV Systems.

"We have confirmed through this trial that the cost for the interactive technology needed to deliver video-on-demand to a mass market is just pennies per customer, per video," said Grebow. He added that by "interactive technology," he was referring to the cost for servers, encoding, the production of navigational interfaces and related processes, but not to the cost of transmission or the cost of license fees for programs.

"In short, video-on-demand will add significant value when offered in conjunction with off-air and satellite TV services," said Grebow.

Bell Atlantic will first enter the video market in late 1996 using wireless technology to deliver a TELE-TV-branded digital television service. Then in 1997, on-demand services will be added to the digital TV offering and delivered over the modernized telecommunications network that the Bell Atlantic telephone companies will be deploying in selected markets.

TELE-TV, based in New York, with offices in Los Angeles and San Ramon, California, and Reston, Virginia, was created by Bell Atlantic, NYNEX and Pacific Telesis to spearhead their entry into the video entertainment market. TELE-TV Systems is the unit that will assemble and integrate the technology needed to develop and deliver video services. TELE-TV Media is the unit that will acquire, create and package programming.

Bell Atlantic Corporation (NYSE: BEL) is at the forefront of the new communications, entertainment and information industry. In the mid-Atlantic region, the company is the premier provider of local telecommunications and advanced services. Globally, it is one of the largest investors in the high-growth wireless communication marketplace. Bell Atlantic also owns a substantial interest in Telecom Corporation of New Zealand and is actively developing high-growth national and international business opportunities in all phases of the industry.

Mid-Term Report

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INTERNET USERS: Bell Atlantic news releases, executive speeches, news media contacts and other useful information are available on Bell Atlantic's media relations World Wide Web site (<http://www.ba.com>), by gopher (<gopher://ba.com>) or by ftp (<ftp://ba.com/pub>).

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March 19, 1996

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Sidebar Fact Sheet
Results of Bell Atlantic Video Services Video-On-Demand Market Trial

Trial Results (May - November 1995)

Usage/ programming preferences

- Buy rates for the top Stargazer movie title (30 percent) significantly exceeded the highest buy rates for the identical movie title (6 percent) in a high-performing cable pay-per-view system. (Source: *1996 Pay-Per-View Report*, published by Paul Kagan Associates, Inc.)
- Composite buy rate for *all* subscribers in the first six months was 330 percent per month, compared to a 26 percent average buy rate for pay-per-view (Source: *1996 Pay-Per-View Report*, published by Paul Kagan Associates, Inc.)
- Stargazer households averaged 3.3 videos purchased per month, compared to 3.2 videos rented per month by households with a VCR. (Source: *The Interactive Home - '95*, © INTECO Corporation.)
- On average, 73 percent of all subscribers purchased some programming each month.
- Usage by programming category (see attached chart):

<u>Category</u>	<u>% Purchases</u>	<u>% Revenue Generated</u>
New release movies	50	79
Library movies	15	12
Kids' Zone	15	3
Learning & Lifestyles	9	3
TV favorites	7	2
Specials	4	1

- On average, more than 70 percent of all program titles were viewed each month, reflecting customers' desire for a diversified product offering. *Usage by category also supports the view that demand exists for a diversified product offering.*

- Stargazer viewing patterns are skewed to Friday-Saturday viewership (47 percent of viewing hours for two-day period versus 53 percent for the remaining five week days).
- *Stargazer competes most with prime time television programming.* Daypart viewing hours were 6-9 a.m. (1 percent); 9 a.m. - 3 p.m. (17 percent); 3-6 p.m. (12 percent); 6-8 p.m. (16 percent); **8-11 p.m. (46 percent)**; 11 p.m.-1 a.m. (7 percent); 1 a.m.-6 a.m. (2 percent). (See attached chart.) *This is significant for the prospective use of video on demand in conjunction with advertising and retailing.*
- Initial Stargazer seasonal usage mirrored cyclical video rental and cable TV trends with usage dipping during the period that includes the start of the new school year, launch of the football season and premier of the network television new fall programming line-up.
- Progress was made in addressing the promotional challenges associated with programming in an on-demand environment in which there is little urgency to view (in contrast to the time-of-day, day-of-week environment of broadcast TV). Promotional vehicles being experimented with include pricing promotions, "barker" channel, post cards and the Stargazer magazine. Truly robust promotion must wait until video on demand capabilities are integrated with linear TV channels.
- Although subscribers like the idea of home shopping on demand, they would prefer retail offerings that allow ordering on screen, a level of interactivity not yet available on Stargazer.

Pricing

- Given identical programming, purchases in two price cells show differences in *how much* programming is bought, but little difference in *what* programming is bought. Average Cell A subscriber (lower priced cell) has bought one more event per month than average Cell B subscriber (higher priced cell). Cell A price range is \$.49 to \$3.29; Cell B range is \$.79 to \$4.49.

Customer service

- The percentage of time Stargazer service has been available for subscriber use (server and transmission platform availability) has ranged from 99.3 to 99.8 over the first six months.
- According to research conducted by an independent firm, provision of customer service has met or exceeded customer expectations 96 percent of the time. (Based on July- November average ratings in eight service categories: promptness in answering

Mid-Term Report Fact Sheet

Page 3

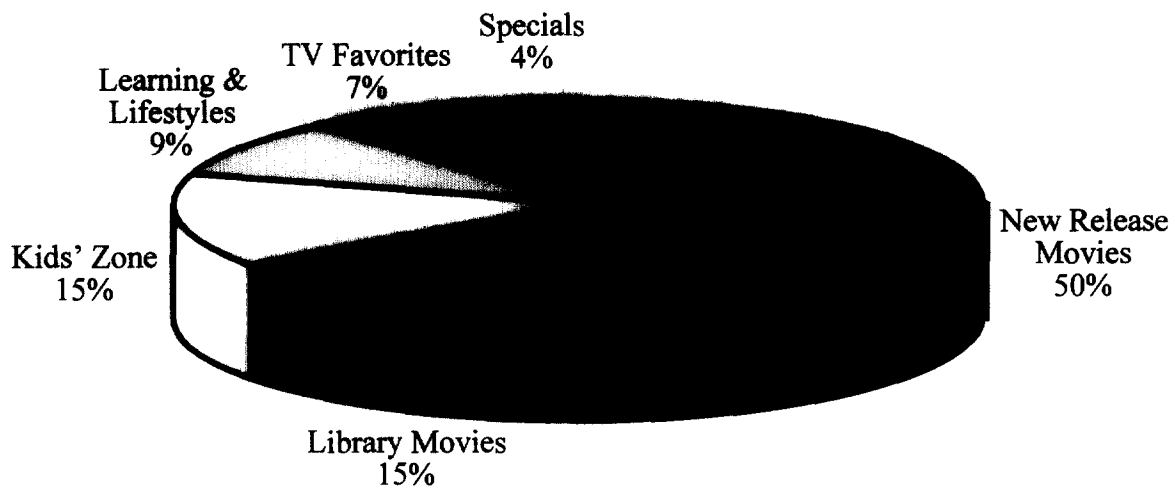
call, courtesy, ability to answer questions, knowledge, understanding request, understanding Stargazer, explaining Stargazer, and problem solving.)

- *The service experienced less than 1 percent controllable churn per month during the period measured.* Sixty-three customers disconnected service over the first six months of the trial, with 40 percent of them doing so because the household moved to another location without access to the service.

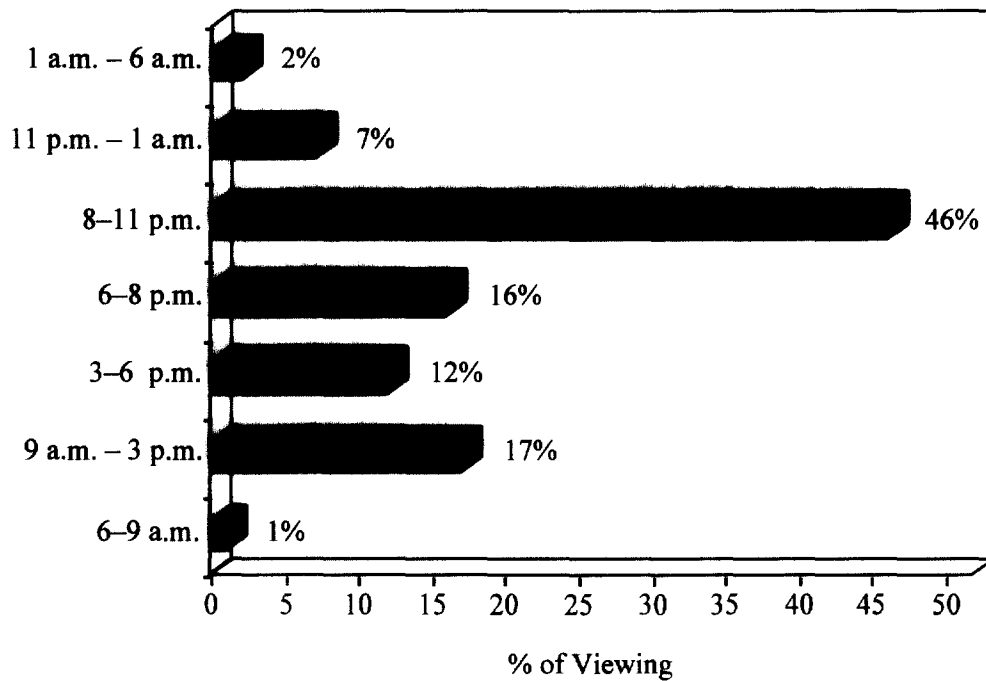
Qualitative findings

- Some 83 percent of subscribers said Stargazer prices were very or somewhat reasonable. Some 73 percent said pricing was better or equal to the value of video rentals.
- Initial satisfaction with the service was high (7.27 on a 10 point scale), and a strong majority were satisfied with the log-in process.
- Some 56 percent said the overall ease of use of the service was better than they expected, while 64 percent said the process for signing up for the service was easier than expected.
- Market trial customers uniformly requested even more content than the more than 655 program choices available for viewing each month.
- Some 94 percent said they have been able to find the programs they want using on-screen navigation. Some 88 percent said moving through various screens and menus using the remote control was very or somewhat easy.

Usage by Programming Category



Stargazer Competes Most with Prime Time Television Programming



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Sidebar Fact Sheet
Description of Service and Technology involved in
Bell Atlantic Video Services
Video-on-Demand Market Trial

Trial Description

The Stargazer video-on-demand market trial is with 1,000 customers in Fairfax County, Virginia. The market trial is the second phase of an ongoing product development effort that began with a first phase, technical trial in 1993. The product is designed to be commercially viable (i.e., key system components are cost effective), but is not viewed by Bell Atlantic as being market ready. Market readiness waits on further product development and refinement.

Results of this trial will help TELE-TV create an interactive TV product that Bell Atlantic will deliver via its full service network, starting in 1997. The interactive TV product will be comprised of two elements: interactive, video on demand capabilities presented via a "navigator" and multiple linear TV channels, packaged via an "electronic program guide."

Product Description

Includes 655+ archived program choices with 25 percent monthly refresh rate. Customers pay for each program watched, with prices ranging from \$0.49 to \$4.49. Product is substitute for pay-per-view and video rental.

Four programming categories: entertainment (movies, TV shows); kids' zone (movies, TV shows, educational programs); learning & lifestyles (documentaries, how-to's); home shopping (Lands' End, JCPenney, Nordstrom). Also spotlight category (promotions, programming packages).

Full VCR functionality (pause, stop, fast forward, rewind).

Systems and Operations Description

Transmission:

Delivered using ADSL (asymmetric digital subscriber line) technology over existing copper phone lines. ADSL equipment is manufactured by Westell. Allows simultaneous use of telephone and video over the same phone line.

Interactive Technology, Production and Operations:

TELE-TV Media's Digital Production Studio (DPS), equipped with state-of-the-art production and post-production equipment, designs and produces the Stargazer interactive TV navigation experience that enables consumers to order entertainment and information from their television screens. In addition, TELE-TV Media produces monthly shows that promote the month's offerings to Stargazer viewers. The DPS is staffed with interactive designers, graphic artists, video directors and producers. Using tools from Apple, Silicon Graphics, Avid, Discreet Logic and Quantel, the Stargazer interface is updated and refreshed each month so that the viewers are presented with the offerings clearly categorized and easy to find.

TELE-TV Systems' Digital Service Bureau (DSB) provides post-production and content preparation services including encoding, encrypting, packaging and reformatting all forms of content for playback on various distribution systems. The DSB currently has MPEG-1 and MPEG-2 encoding capabilities. The DSB has instituted rigid and proprietary encoding processes and can support more than 20,000 minutes per month.

Bell Atlantic Video Services' Operation Center receives encoded programs and navigation screens from TELE-TV's DPS and DSB and stores them in the on-line transaction computers and video servers that hold entertainment, informational, promotional and other material for on-demand delivery to customers. In addition to delivering the services, the Operations Center generates monthly bills for customers, royalty checks for programmers, and provides monitoring and other services needed to run a commercial video-on-demand business. The Operations Center is staffed 24 hours a day, seven days a week. Hardware includes Sequent and nCube computers and software from Oracle, EDS and others.

Bell Atlantic Video Services' Customer Service Center (CSC) in Martinsburg, West Virginia, provides service to customers from 8 a.m. to midnight, seven days a week. Account executives are prepared to answer questions about customer bills, how to operate the service and to suggest current and future viewing options. The CSC is connected to Bell Atlantic Video's billing systems and to the Operations Center and is equipped to trouble-shoot customer service and equipment problems.

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